

### REMARKS

This is in response to the Final Office Action mailed March 27, 2007. Claims 1-28 are presently pending. No new matter has been added. The Applicant thanks the Examiner for indicating that Claim 27 would be allowable if rewritten in independent form.

The Applicant thanks the Examiner for the telephonic interview with the undersigned on May 8, 2007. During the interview the Song reference was discussed and the Examiner agreed that the present claims overcome the rejection in the present Office Action.

### §103 Rejections

Claims 1-26 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Del Corno *et al.* "Active-passive mode-locked Nd:YAG laser with passive negative feedback" ("Del Corno") in view of Il'ichev *et al.* "Model of a passively Q-switched laser accounting nonlinear absorption anisotropy in a passive switch" ("Il'ichev") and further in view of Song *et al.* "Passively Q-switched diode-pumped continuous-wave Nd:YAG-Cr<sup>4+</sup>:YAG laser with high peak power and high pulse energy" ("Song"). The Applicant traverses these rejections.

Independent claims 1 and 13 each recite that a location (claim 1) or position (claim 13) of the SA (saturable absorber) element is variable so that the SA element can be positioned between different pairs of other components of the laser and wherein the output pulse duration can be varied by varying the location/position of the SA element. The Office Action implicitly acknowledges that Del Corno and Il'ichev do not teach or suggest variability in the position of the SA element. The Office Action cites Song as allegedly teaching variability in position of the SA element.

In fact, however, Song teaches away from variation in the position of the SA element. Song actually teaches selecting a single location for the saturable absorber within the laser cavity to minimize thermal lensing. Song states: "If the original design were optimized for cw performance, changes caused by the insertion of a saturable absorber at P2 and P3 would be larger than that at P1. The closer we position the saturable absorber to the active rod, the less the effect of thermal lensing on the saturable absorber. So, we conclude that thermal lensing of a saturable absorber is important

and should be minimized in the resonator design of a high-power laser.” Song, p. 4957 (emphasis added.) This explicit recommendation in Song precludes variation in position/location as recited in the present claims because such variation in position/location of the SA would not minimize thermal lensing.

Therefore, the references do not teach or suggest every element of the claims. For at least these reasons, claims 1 and 13, as well as claims 2-12 and 14-27 which depend therefrom, are patentable over the cited references. The Applicant respectfully requests withdrawal of the rejections of these claims.

With respect to claim 28, the Office Action asserts that “[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to place the SA between the PNF and the AOML as this position would place the SA near to the gain medium, and would allow for a minimal affect [sic] of thermal lensing.” Office Action, pp. 5-6.

The Applicant respectfully submits that there is no indication in the claim that placing the SA between the PNF and the AOML will position the SA near the gain medium. In fact, Figure 3 of the present patent application clearly illustrates the opposite of the Office Action’s assertion. In the embodiment illustrated in Figure 3, when the SA 70 is positioned between the AOML 34 and PNF 74 (for example, SA positions III, IV, or V) the SA is on the opposite side of the cavity from the gain medium 26. In the embodiment illustrated in Figure 3, SA positions I and II, where the SA is not between the AOML and PNF, are closer to the gain medium than those SA positions that fall within the scope of claim 28.

Therefore, the references do not teach or suggest every element of claim 28. For at least these reasons, claim 28 is patentable over the cited references. The Applicant respectfully requests withdrawal of the rejection of this claim.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner has any questions or concerns, the Applicant encourages the Examiner to contact the Applicant's representative, Bruce Black, by telephone to discuss the matter.

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Respectfully submitted,

By B. E. Black

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